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(54) Title: **INTERNET POINT OF ACCESS CONTENT INSERTION METHOD AND INFORMATION DISTRIBUTION SYSTEM**

(57) Abstract:

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## PCT

(PCT Article 17(2)(a), Rules 13ter.1(c) and Rule 39)

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1. ☒ The subject matter of the international application relates to:

- a. ☐ scientific theories.
- b. ☐ mathematical theories
- c. ☐ plant varieties.
- d. ☐ animal varieties.
- e. ☐ essentially biological processes for the production of plants and animals, other than microbiological processes and the products of such processes.
- f. ☒ schemes, rules or methods of doing business.
- g. ☐ schemes, rules or methods of performing purely mental acts.
- h. ☐ schemes, rules or methods of playing games.
- i. ☐ methods for treatment of the human body by surgery or therapy.
- j. ☐ methods for treatment of the animal body by surgery or therapy.
- k. ☐ diagnostic methods practised on the human or animal body.
- l. ☐ mere presentations of information.
- m. ☐ computer programs for which this International Searching Authority is not equipped to search prior art.

- ☐ the description      ☐ the claims      ☐ the drawings

- ☐ the written form has not been furnished or does not comply with the standard.
- ☐ the computer readable form has not been furnished or does not comply with the standard.

4. Further comments:

Name and mailing address of the International Searching Authority  European Patent Office, P.B. 5818 Patentaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer  <b>M. Rodriguez Nóvoa</b>
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## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 203

The claims relate to subject matter for which no search is required according to Rule 39 PCT. Given that the claims are formulated in terms of such subject matter or merely specify commonplace features relating to its technological implementation, the search examiner could not establish any technical problem which might potentially have required an inventive step to overcome. Hence it was not possible to carry out a meaningful search into the state of the art (Art. 17(2)(a)(i) and (ii) PCT; see Guidelines Part B Chapter VIII, 1-6).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

Historically, to reach business audience, advertisers rely on traditional mass media channels, such as television, radio, newspapers and magazines. In the traditional mass media advertising model, mass media develop particular content of interest to certain classes of business audiences. This model of advertising is based on a pull model, whereby mass media with content of interest to audience captures audience attention by attracting or "pulling" audience to read or subscribe to the content. Typically, traditional mass media may charge audience for content delivery (subscription fees, cable television subscription fees, etc.), but receives most of its revenues from advertisers.

Because of the limited reach of traditional mass media, and the lack of ability to accurately target business audience by the industry they work in, the job function they serve and the company they work for. Advertisers have been looking for new and better ways to reach and target business audiences. With the advent of computers, networks and the Internet, advertisers are increasingly using online advertising and marketing to reach business audience. This trend is not surprising because business audience makes the majority of Internet users since most employees have access to the Internet through Internet connection at their workplace. The Internet has made mass media content delivery a lot easier and a lot more cost effective, by allowing audience to reach content with the click of a mouse button and content to be automatically delivered to subscribers over data-networks.

Advertising over the Internet and via the electronic channels have mostly been limited to methods based on the traditional mass media "pull" model of developing particular content or functionality capable of attracting audiences. Online portals and publishers such as Yahoo, Excite, NBC.com and BusinessWeek.com develop content, functionality (e.g., search engine, mapping tools, classifieds, stock quotes, chat rooms, etc.) and personalized content (e.g., MyYahoo, or MyExcite, etc.) to attract audience to visit their web-site frequently. Vertical online publishers such as AdAge.com, DiaryFoods.com and VerticalNets develop industry specific content and functionality to attract industry specific audiences to visit their web-site frequently, thereby building industry specific "online communities". Online broadcasters such as Broadcast.com and Pointcase automatically push or deliver content to subscribers over electronic channels, but broadcasters must first develop specific content to attract audience to

become subscribers. Similarly online communities such as AOL, CompuServe and Prodigy attract subscribers by offering easy access to the Internet, content and online utilities.

5           Like its predecessors, online advertising based on traditional mass media model are limited in effectiveness when used to target business audience, both in reach and in their ability to accurately target business audience by the industry they work in, the job function they serve and the company they work for. In addition, online advertising based on traditional mass media model is dependent on the availability of good content or functionality to attract audiences.  
10   Such dependency on content and functionality imply the existence of a middleman or third parties such as online publishers recoup their costs by charging advertisers a high price or by charging subscribers a subscription fee.

          In finding ways to improve online marketing, a number of new models for advertising  
15   online have emerged. However, these methods are also ineffective in reaching and targeting business audience. For example, CyberGold developed a method to pay people to read advertisements (Patent 5,794,210). While this method may be effective in attracting money conscious consumers, it is not effective in attracting business audience who are less money conscious and more time conscious. In another example, FreePC.com offers free computer and  
20   Internet access to subscribers in return for the ability to track subscribers' profile, usage pattern and to advertise to them. While this method may be effective for reaching money conscious consumers who may subscribe to receive a free computer for their home, it is not effective in reaching business audience accessing the Internet or Intranet from work.

25           As the Internet continues to grow at an exponential rate, the number of online publishers or websites that offer content and/or functionality is also increasing at an alarming rate. Online advertisers, looking to improve reach to and targeting of business audience, are working around the problem by simultaneously advertising in as many online websites as possible. This concept of flooding the mass media (in this case the Internet) with advertisement to reach  
30   audiences can be a costly proposition with limited success at targeting specific category of business audience.

To facilitate this flooding process and to improve on targeting, online advertising agencies or aggregators such as DoubleClick and 24/7 Media have recently emerged to organize online publishers and Internet websites into advertising consortiums to offer to advertisers a one-stop shopping option. Aggregators organize a large number of online publishers and Internet websites into categories, providing advertisers one place to go to for advertising to multiple online websites matching the category an advertiser is interested in targeting. While offering convenience for both online websites and advertisers, this model is expensive. For their efforts, aggregators may charge to 50 percent or more in commission on advertisements place through them. While aggregators provide one-stop shopping convenience, their ability at reaching and targeting business audience continues to be limited by the reach and targeting limitations of the online publishers or Internet websites they represent.

In finding ways to reach business audience, industry experts have suggested an extension of online advertising from "public" Internets into "corporate" Intranets. Intranets are internal company websites that provide company specific information, functionality or utilities made available only to computer users connected within the firewalls of a company's data-network. Over the next few years, aggregators may try to convince companies to open up their Intranets by offering companies a source to handle sales, targeting, and advertisement serving. While this concept of opening up corporate Intranets for advertisers to advertise to business workers is intriguing and has been discussed since 1996, it has yet to become a mainstream channel for advertising. There are many reasons why.

First, the value proposition for companies to open up their Intranet for advertising is limited. The number of Intranet users within a single Intranet is limited to the number of users who are able to connect to the company's internal data-network. In addition, statistics have shown that business users spend only a small percentage of their time looking for Intranet content, spending the larger percentage of their time looking for Internet content instead. As such advertising revenues that could be generated from advertising is small for any single company as compared to revenues generated by the Internet online publishers. Second, most corporate Intranets unlike online publishers or commercial websites are poorly designed and developed to support online advertising. To support advertising, companies may need to completely redesign their Intranet website or develop new infrastructure, which may be a costly proposition. Third, advertising on Intranet websites is still content dependent, as such

companies who choose to open up their Intranet for advertising must find ways to continuously develop good content and functionality to increase usage of the Intranet. Since most companies are not in the online publishing business, they will face tremendous difficulties competing with Internet publishers for viewer-ship. Finally, the controversy that advertising to employees is not good corporate culture because it may encourage non-work related activities and it may negatively impact employee productivity.

The present invention proposes a method to solve the issues mentioned above that remain unresolved by existing methods and prior art.

### SUMMARY OF THE INVENTION

It is understood that prior to the present invention, there was no subscription and/or content independent online method for automatically "pushing" information or advertising to business workers that was capable of reaching and targeting business workers by the industry they work in, the company they work for or the job functions they serve.

Also, prior to the present invention, there was no advertising network that provides businesses or companies a way to advertise or market to each other's workers via an advertisement and audience exchange mechanism, thereby eliminating mass media. By eliminating the "middleman" in advertising, companies have the potential to significantly reduce their marketing or advertising costs.

Also, prior to the present invention, there was no method for leveraging a computer user's attention when the user was accessing Internet or Intranet content over a private data-network by supplementing content requested with information or advertisements from a different source totally independent from the source requested by user.

Also, prior to the present invention, there was no advertising method that minimizes impact on worker productivity by providing a way for companies to limit advertising to its workers to only when certain conditions are met. For example, a company may set policy to display advertising to workers only when worker was requesting for Internet content. In

another example, a company may also set policy to display advertising to workers by limiting the total number of advertisements displayed to each worker within a certain time period (e.g., no more than 10 advertisements a day). In yet another example, a company may also set policy not to display advertising to workers when workers are accessing specific Intranet or Internet websites or web pages.

The systems and methods described herein attempt to satisfy a number of objectives that work together to create a new information and advertising channel unlike the examples mentioned above.

It is one goal of the present invention to create an advertising network by aggregating and organizing owners of private data-networks into an alliance to offer advertisers and each other the ability to advertise to users who are accessing Internet or Intranet content over their data-network, by automatically supplementing user requested content with advertisements stored on a central database located within or outside their private data-networks.

Another goal of the present invention is to divide web-browser display into at least two portions, where the first portion displays content requested by user accessing Internet or Intranet content over a private data-network, and the second portion automatically displays information or advertisements from a different source located within or outside a private data-network that is independent of the source requested by user.

Another goal of the present invention is to display in the primary browser content requested by user accessing Internet or Intranet content over the private data-network, and automatically displaying in a separate child window information or advertisements from a different source located within or outside a private data-network that is independent of the source requested by user.

Another goal of the present invention is to provide a method for members of the advertising network to review and approve content of information or advertisements before the information or advertisements are displayed to their users.





Another goal of the present invention is to categorize advertisements, and automatically analyze and categorize title or subject of content requested by user, and to display advertisements associated with each category at the same time subject matter of user requested content associated with the same category is displayed, thereby providing a way for advertisers to "target" audience.

Another goal of the present invention is to provide a way to setup, track and change user profile of users in the advertising network, and to display advertisements associated with categories that match categories of interest to the user, thereby providing another way for advertisers to "target" audience. User profile may indicate user characteristics, and categories and sub-categories of topics which are of interest and not of interest to the user.

Another goal of the present invention is to provide a way to limit advertisements displayed based on the criteria or policies of each advertising network member. For example, to limit the number of advertisements displayed to each user to no more than 10 each day, to limit the number of times the same advertisement is displayed to each user so as to manage repetition, to only display advertisements when user requests for content from the Internet but not the Intranet, or not to display advertisements when user is requesting content from specific web pages or web-sites.

Another goal of the present invention is to display information items or advertisements that are also pointers (active web links) to another web-site or web page, and to automatically display a linked web-site or web page when user selects on an active web link with a mouse pointer.

Another goal of the present invention is to provide a method to track user selections when user selects a displayed advertisement web links with a mouse pointer, and a method to store and retrieve the history of user selections for each user.

Another goal of the present invention is to automatically measure, track and report on advertising effectiveness of specific advertisements, network members or users within the advertising network. Effectiveness of advertisements may include the number of times an

advertisement is displayed and the number of times an advertisement is accessed. Effectiveness of user may include the number of advertisements displayed to user and the number of advertisements accessed by user. Effectiveness of network members may include the cumulative number of advertisements displayed to all its users and the cumulative number of advertisements accessed by all its users.

Another goal of the present invention is to provide a method for members of the advertising network to easily compose an information item and to submit information item to the information and advertising system for display to users within member's own private data-network.

Another goal of the present invention is to provide a secured electronic method for advertisers or advertising network members to easily submit information items or advertisements and schedule automatic distribution of informational items or advertisements to target audiences.

Yet another goal of the present invention is to provide a method for handling, processing and tracking advertisement generate user transactions, such as inquiry, order, fulfillment, payment, or purchase of products or services.

The systems and methods described herein provide online advertising networks made up of a plurality of network members and one or more network administrator. Members of the advertising network may be companies, organizations, such as schools, clubs, virtual networks, or individuals who own one or more private data-networks, typically having a predetermined number of users (for example, more than 10 users per network, etc.). Users are individuals who access Intranet or Internet content through the private data-network using web-browsers or similar display devices. Through an online information and advertising distribution system, members of the advertising network may offer advertisers and each other the ability to advertise to users who are accessing Internet or Intranet content over their private data-network. The network administrator may organize and manage the processes that enable the advertising network. The owner of the private data-network or the members of the advertising network may earn incentives, such as rebates on services and equipment, credit points for on-line purchases or for traditional shopping, rebates, cash, or other incentives, from an advertising

network administrator. The incentive earned may be based on the number of users, number of advertisements displayed to users, number of advertisements accessed by users, number of transactions completed by users, or any other suitable criteria. Additional incentives may also be awarded for members who provide more information about their users, such as user profile.

5 Incentive points may be purchased or exchanged for cash, or other value from a network administrator. Incentive points may also be used to pay for marketing or advertising over the online advertising network. These incentives may be employed for reducing the costs of ownership of a private data network. Thus in one practice, the systems and methods described herein allow a network administrator to offer a company, school, organization or other entity,  
10 services and equipment at a reduced cost, wherein advertising revenue may be derived for supporting deployment of the network.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

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These, as well as other objects and advantages of this invention, will be more completely understood and appreciated by careful study of the following more detailed description of an exemplary embodiment of the invention taken in conjunction with the accompanying drawings, of which:

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**FIG. 1A** provides a pictorially overview of certain systems according to the invention.

**FIG. 1B** illustrates an example online advertising network.

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**FIG. 2** illustrates one overall environment in which the information and advertising distribution system of the present invention may be employed.

**FIG. 3** illustrates a flow chart of steps performed to display information items or advertisements.

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**FIG. 4** illustrates an example user interface.

**FIG. 5** illustrates a flow chart of steps performed by advertising application module 225 to append advertisement templates onto user requested Intranet or Internet content.

**FIG. 6** illustrates a flow chart of steps performed by the local advertising server 221 to  
5 serve online advertisements to user computer 204.

**FIG. 7** illustrates a flow chart of steps performed by the information and advertising system when user selects on a displayed advertisement to perform a drill down or transaction.

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### **DETAILED DESCRIPTION OF CERTAIN ILLUSTRATED EMBODIMENTS**

In the following description, for purposes of explanation, specific numbers, materials and configurations are set forth to provide a thorough understanding of certain embodiments  
15 of the invention. For example, for clarity the network depicted below is shown as a single network, however, the systems and methods described herein may be part of an aggregation of private data networks that have joined together to offer a greater pool of consumers to the network administrator, thus increasing the revenue possibilities. For example, a number of small companies, or self-employed people, may be willing to form a private data network, either  
20 real or virtual, in exchange for receiving incentives for viewing ads, or other content. Thus, it will be apparent to one skilled in the art that the systems and methods described therein may be practiced without the specific details. In other instances, well known systems are shown in diagrammatic or block diagram form in order not to obscure the present invention.

**FIG. 1A** provides a pictorial overview of one embodiment of the present invention. The present invention may be an online advertising network made up of a plurality of network members and one or more network administrators. Members of the advertising network may be companies, organizations, such as schools, clubs, virtual networks, or individuals who own one or more private data-networks, typically having a predetermined number of users (for  
30 example, more than 10 users per network, etc.). Users may be individuals who access Intranet or Internet content through the private data-network using web-browsers or similar display devices. Through an online information and advertising distribution system, members of the advertising network may offer advertisers and each other the ability to advertise to users who

are accessing Internet or Intranet content over their private data-network. The network administrator may organize and manage the processes that enable the advertising network. The owner of the private data-network or the members of the advertising network may earn incentives, such as rebates on services and equipment, credit points for on-line purchases or for traditional shopping, rebates, cash, or other incentives, from an advertising network administrator. The incentive earned may be based on the number of users, number of advertisements displayed to users, number of advertisements accessed by users, number of transactions completed by users, or any other suitable criteria. Additional incentives may also be awarded for members who provide more information about their users, such as user profile. Incentive points may be purchased or exchanged for cash, or other value from a network administrator. Incentive points may also be used to pay for marketing or advertising over the online advertising network.

The present invention may be also an information and advertising distribution system. A central advertising server, connected to the Internet, stores and updates a database of information items and advertisements. The information items and advertisements may be each categorized so that each has an associated information category, advertisement category, and one or more categories of target audience characteristics (e.g., location, company, job function, time period, etc.). Information items, advertisements and their categorization may be added, deleted or changed by network administrator.

For each advertising network member, a local advertising server may be connected to member's private data-network. Each local advertising server stores a database of information items and advertisements that may be displayed or to be displayed to users of private data-network the server may be connected to. Each local advertising server also stores and updates a database of advertising metrics, geography or location of the business, or member, user profile and company profile. Each local advertising server includes a communication interface for automatically synchronizing and updating data records with the central advertising server.

Also, for each advertising network member, an advertising application module may be installed on each proxy server and on each Intranet web server connected to the member's private datanetwork. Advertising application wraps (or appends) an advertising template around user requested content packet returned either by Internet servers via the proxy or by Intranet

web servers. Advertising template may be "html" code that point to the local advertising server and creates a child browser window and/or a separate portion on the primary browser window where advertisements received from the local advertising server may be displayed. Each advertising application module includes configuration properties containing rules that trigger the application active or inactive under different situations. Each advertising application also includes a communication interface with central advertising server that allows advertising network administrator the ability to set or update such configurations.

User computers may be laptops, desktops, PDAs or any device capable of running a web-browser that may be connected to member's private data-network. Each time user computer issues a request for Internet or Intranet content via a web browser application or any web display application, Internet request may be routed through proxy server to the Internet while Intranet request may be sent to specific Intranet web server. Depending on configuration properties of each advertising application module, the requested content returned by proxy or Intranet web servers may include advertising template. A web browser on the user computer may be instructed by the returned content packet that includes advertising template to display information items or advertisements received from local advertising server at the same time the user requested content may be displayed. Advertising template may also initiate a handshake (or connection) between the user computer and local advertising server. After handshake is established, local advertising server may read the title of the requested content, and the software "cookie" (that provides user identity) stored on the local hard drive of user computer. The local advertising server may determine content category by parsing the title of the requested content and matching keywords found with subject categories stored in the profile database. Local advertising server also determines user category or categories by searching for user's profile record with user "cookie". Local advertising server sends one or more advertisements (that may or may not have been displayed to user before), whose category or categories matches user's profile or content subject categories, to user's computer. Local advertising server may create new "cookie" for new user or reinstate "cookie" on user computer if deleted. Local advertising server also provides a user interface to allow new users to create a new user profile, and to allow existing users the ability to update their profile.

For each user and/or each advertisement, local advertising server may store a database with statistics on advertisements displayed, and advertisements selected. Statistics may be

automatically updated each time an advertisement may be displayed to user and each time a user selects on an advertisement. Local advertising server may be automatically synchronized with central advertising server on a periodic basis scheduled by network administrator. Central advertising server initiates a handshake to connect to each local advertising server. Once  
5 connected, central advertising server downloads new advertisements to, and uploads statistics and new user profile from local advertising server.

**FIG. 1B** shows an embodiment of an online advertising network of the present invention. The online advertising network may be made up of an administrator 101, a plurality  
10 of members 102, and a plurality of advertisers 103. Members 102 of the advertising network may be companies, organizations or individuals who owns one or more private data-networks (such as 203) with more than a predetermined number of users. Users may be individuals or workers who uses computing resources connected to a private data-network 203. Using an online information and advertising distribution method, network members 102 may offer  
15 advertisers 103 the ability to advertise to users of computing resources connected to their private data-network (such as 203). Network members 102 may also be advertisers 103 of the advertising network. Network administrator 101 organizes and manages the processes that enable the advertising network.

20 The process of advertising in the advertising network begins typically with process step 111, in which advertiser 103 provides administrator 101 with an information item or advertisement to be distributed and displayed to users of members 102 within the advertising network. Depending on the information and advertising distribution system in use, advertiser 103 may be able to target distribution of information item or advertisement to specific users  
25 based on categories, such as user interests, user job function, member's industry group and/or user demographics. Advertiser 103 may also specify to administrator 101 when the advertisement should be distributed and displayed and for how long.

Process step 111 may be followed by process step 112 where administrator 101 through  
30 an information and advertising distribution system distributes and displays advertisements provided by advertiser 103 to targeted users when users are using computing resources connected to private data-networks 203 belonging to network members 102. Each time an advertisement is displayed to a user, accessed by a user, or each time a transaction (sale of a

product or service) is completed by a user, process step 113 may be initiated where network administrator 101 records the event. At the end of defined time period when process step 112 is completed, process step 114 may be initiated where administrator 101 sends to advertiser 103 an invoice and a report on the total number of advertisement displayed, advertisements accessed  
5 and transactions completed as a result of process step 112. Process step 114 may be followed by step 115 where advertiser 103 pays administrator 101 an amount specified in the invoice of step 114. If advertiser 103 is also a network member 102, the invoice may be paid with network credits. Network members 102 earn network credits through process step 116, where on a periodic basis, administrator 101 awards member 102 network credits based on the total number  
10 of advertisements displayed to, advertisement accessed by and transactions completed by users of member's private data-network. Additional credit points may also be awarded by administrator 101 to members 102 who provide more information about their users, such as completing user profiles to allow advertisers ability to better target users.

15 Credit points may be exchanged for cash from network administrator through process steps 120 and 121. Network administrator 101 may publish a network credit to cash exchange rate. Member 102 returns network credits to administrator 101 in process step 120. Administrator 101 pays member 101 cash in the amount specified by the exchange rate in return for network credits received. Also, depending on the information and advertising distribution  
20 system in use, network process steps 111 through 116 and 120 through 121 may be automated in part or in whole.

FIG. 2 shows an example of an overall environment 200 in which the web-based information and advertising distribution system of the present invention may be used.  
25 Environment 200 includes a network 201 such as, for example, the Internet or WANs (Wide Area Networks). Connected to network 201 may be a plurality of private environments 202 that may belong to companies, businesses, organizations or individuals. Private environments 202 includes a private network 203 such as, for example LANs (Local Area Networks) or WANs (Wide Area Networks), protected from non-authorized user access by firewalls 208.

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A plurality of computers 204 may be connected to private network 203. Also, connected to private network 203 may be a plurality of Intranet web servers 205, a DNS (Domain Name System) server 206, one or more proxy server 207, a local advertising server 221, one or more



local advertising database 222, and router 208. Private network 203 allows each of computers 204, 205, 206, 207, 221 and 222 to communicate with other computers. Router 208 acts as a firewall to restrict public access to private network 203 from network 201 to only authorized data traffic. Network connection 209, which may be provided by an ISP (Internet Service  
5 Provider) connects a private network 203 to the Internet or network 201.

Also connected to network 201 may be a plurality of Internet web servers 231 and a central advertising system environment 220. Internet web servers 231 may be application or database servers that hosts web-sites, web pages or web applications. Central advertising system  
10 environment 220 may be made up of one or more central advertising server 223 and one or more central advertising database 224. Network 201, the Internet, allows central advertising system environment 220, web servers 231 and private environments 202 to communicate with each other.

15 The depicted servers and client elements may comprise conventional data processing platforms such as an IBM PC-compatible computer running the Windows operating systems, or a SUN workstation running a Unix operating system. In one particular embodiment, the depicted server systems comprise MIPS R10000, based mullet-processor Silicon-Graphic Challenge servers, running IRIX 6.2, and the Apache web server. Although the depicted system  
20 100 depicts the clients and servers as computer workstations, it will be understood that the clients and server platforms may comprise dedicated processing systems, such as handheld devices or single board computers that include embedded programmable data processing systems. The client devices may employ any suitable technology for carrying information between the client and the network, including cellular, infra red, or other wireless technology,  
25 and may employ any suitable protocol, including but not limited to CDMA, GSM, bluetooth, and IRDA. In either embodiment, the systems may operate to transfer data according to an assigned protocol, such as HTTP, or any variation of HTTP, FTP, or other protocol and the design and development of such systems follows from principles known in the art including those set forth in Jamsa, *Internet Programming*, Jamsa Press (1995), the teachings of which are  
30 herein incorporated by reference.

A different user may operate each user computer 204. Computer 204 may be desktop computers, laptop computers, PDAs or any other computer device that can run a web-browser

or similar display applications. Computer 204 may be connected to network 203 via an Ethernet LAN connection, modem connection, VPN (Virtual Private Network) connection or any other methods of network connectivity. Each time a user logs onto a private data-network with a user computer 204, computer 204 may be assigned either a static IP address or dynamically assigned an IP address. Each user computer 204 stores on its hard-drive memory one or more copies of web browser software (such as, Netscape Navigator, Microsoft Internet Explorer, etc.) or application capable of displaying web pages. Also stored on each user computer 204 local hard drives may be advertising cookie 226. Advertising cookies 226 are typically software files containing information specific to the its host computer 204, and are generated or created the first time a computer 204 interacts with a local advertising server 221 or the central advertising server 223 to allow server 221 or 223 to automatically identify computer 204 in future interactions. For example, advertising cookie 226 may contain the identification number of the user using a computer 204. By reading the user identification number stored in the advertising cookie 226 on user's computer 204, local advertising server 221 will be able to identify the user and automatically retrieve user's profile from local advertising database 222.

Intranet web servers 205 may be servers that hosts Intranet web pages or Intranet web applications. Each server 205 connected to private network 203 may be given an IP (internetworking protocol) address. Each server 205 may be also given a domain name or an Intranet URL address. For each server 205, the domain name or Internet URL and its associated IP address may be stored in a DNS server 206. A user computer 204 may send an electronic information directly to an Intranet server 205 located at a specific IP address if the electronic information is addressed to the specific IP address. However, if electronic information is addressed to server 205 via a domain name or an Internet URL address, the electronic packet may be first routed to DNS server 206 for domain name resolution. DNS server 206 determines the IP address associated with domain name or Internet URL address, and reroutes the electronic information to Intranet web server 205 located at IP address.

Proxy server 207 acts as a communication broker between computers connected in private network 203 and the Internet 201. A user computer 204 or any server connected to network 203 may send electronic information directly to an Internet URL address or Internet IP address. All electronic packets sent to the Internet may be routed to proxy server 207. Proxy server 207 acts as an agent by

sending electronic information to Internet server 231 or 223 located at the Internet URL or IP address through a secured router 208 and connection 209 to the Internet. Internet server 231 may provide a response by sending an electronic packet back to the proxy server 207. Proxy server 207 in turn sends the response back to user computer 204 or server that initiated the request.

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In one embodiment of the present invention, the information distribution and advertising system may be made up of a plurality of local advertising servers 221, a plurality of local advertising database 222, one or more central advertising server 223, one or more central advertising database 224, a plurality of advertising application modules 225, and a plurality of advertising cookies 226.

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A copy of advertising application module 225 executes on proxy server 207 and all Intranet web servers 205 connected to private data-network 203. A copy of advertising application module software may be also stored on the local hard-drives of servers 207 and 205. Advertising application modules 225 perform process step 500 described in FIG. 5.

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A local advertising server 221 and a local advertising database 222 may be connected to a private datanetwork 203. Each local advertising server 221 performs step 600 (advertising serving), and steps 702, 711, 712 and 713 (advertisement selection) of the information and advertising distribution process. Local advertising database 222 stores information items or advertisements scheduled to be displayed to user computer, advertising metrics, user profile of users connected to private datanetwork 203, and member profile of network member 102 who owns private data-network 203.

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Central advertising server 223 and central advertising database 224 makes up the central advertising environment 220 managed by network administrator 101. The central advertising environment 220 may be connected to Internet 201, and communicates on a periodic basis with local advertising servers 221, local advertising databases 222, and advertising application modules 225. Central advertising database stores a master copy of all information items or advertisements scheduled to be displayed, all advertising metrics, all user profiles and all member profiles within the entire online advertising network.

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At a scheduled time (preferably on a daily basis), central advertising server 223 initiates a connection or handshake with each local advertising servers 221 for synchronization. During synchronization, server 223 transmits new information items or advertisements scheduled for distribution from central advertising database 224 to each local advertising database 222. Also during synchronization, each server 221 transmits incremental updates to user profile, member profile and advertising metrics from local advertising database 222 to central advertising database 224. Network administrator 101 may also perform system administration on each local advertising server 221, local advertising database 222 or advertising application module 225 via central server 223, by logging onto each server 221, database 222, or application module 225 through a connection interface with central server 223.

FIG. 3 shows a flow chart of steps performed by the information and advertising distribution system to display information items or advertisements to users requesting for Internet or Intranet content via a private data-network. The process begins at 300 where user computer 204 may be connected to private data-network 203 and running a web-browser software. Generally, there are three ways for user of computer 204 to request for content from the Internet or Intranet, namely 310, 320 or 330.

In step 310, user may request for Internet content by selecting an active Internet web-page link, or by entering an Internet URL address (such as "<http://www.yahoo.com/>") or an Internet IP address (such as "135.122.332") into browser location text-box 404. Step 310 may be followed by step 311 where user request may be routed to proxy server 207 for domain name resolution. If proxy 207 server fails to locate or identify the Internet location requested by user, proxy 207 will send an electronic message back to user computer 204 to inform user of failure. However, if the Internet location requested by user is found, step 312 may be initiated whereby proxy 207 acts as an agent for user computer 204 by sending user request to user provided Internet address. Internet server 231, hosting user requested content at the user specified Internet location, receives request from proxy 207. Step 312 may be followed by step 313 after Internet server 231 successfully receives and acknowledges request from proxy 207 by sending user requested content back to proxy 207. Following step 313, step 500(A) may be performed by the advertising application module 225 running on proxy server 207 to append an advertisement template to user requested content received by proxy 207. After step 500(A), step 301 may be

initiated where content packet appended with advertisement template may be returned to user computer 204 for display.

5 In step 320, user may request for Intranet content by selecting an active Intranet web-page link or by entering an Intranet URL address into browser location text-box 404. Step 320 may be followed by step 321 where user request may be routed to a DNS (Domain Name System) server 206. Step 321 may be followed by step 322 as DNS server 206 performs domain name resolution by looking up a DNS database to determine the IP address associated with the URL address provided by user. If DNS server 206 fails to locate an IP address for user provided URL  
10 address, DNS server 206 will send an electronic message back to user computer 204 to inform user of failure. However, if IP address is found, step 323 may be initiated whereby DNS server 206 routes the user request to Intranet server 205, hosting user requested content at the user specified Intranet location.

15 As an alternative to step 320, user may also request for Intranet content by entering an Intranet IP address into browser location text-box 404 through step 330. By providing a valid IP address, user computer 204 may be able to bypass DNS server 206 through step 331 by sending user request directly to Intranet server 205, hosting user requested content at the specified Intranet IP address. Following step 323 and 331, step 500(B) may be performed by the  
20 advertising application module 225 running on Intranet server 205 to append an advertisement template to user requested content hosted by Intranet server 205. As with step 500(A), after step 500(B), step 301 may be initiated where content packet appended with advertisement template may be returned to user computer 204 for display.

25 After content packet appended with advertisement template is received by user computer 204 in step 301, web browser running on user computer 204 will act to decode the content packet which may be coded in a web-based computer software language (such as HTML, Java, etc.). Step 301 may be followed by 302 where advertisement template embedded in the content packet will instruct computer 204 to initiate a connection with local advertising server 221. After a  
30 connection is established between the local advertising server 221 and user computer 204, step 600 may be initiated whereby information from user computer 204 may be transmitted to local advertising server 221 to determine user profile and subject category of user requested content. Step 600 may be performed by local advertising server 221 to transmit advertisement of specific

categories matching user or content categories from local advertising database 222 to user computer 204 for display. Upon successful transmission of advertisements from local advertising server 221 to user computer 204, step 303 may be performed whereby user computer 204 displays advertisements served by local advertising server 221 simultaneously with user requested content as shown by user display in FIG. 4.

FIG. 4 shows an example user interface to illustrate how advertisements and user requested Intranet or Internet content may be displayed to the user via user computer 204. Web-browser window 401 may be displayed on the screen 400 of computer 204. As with most web-browsers such as Microsoft Internet Explorer or Netscape Navigator, window 401 consists of elements 402, 403, 404 and 405. Menu bar 402 provide user of computer 204 with functionality to configure the properties of web browser 401. Action buttons 403 provide user of computer 204 easy access to navigational features of web browser 401. Location text-box 404 provides user of computer 204 a method for entering URL address or IP address and a method to initiate request for content hosted at a specified Internet or Intranet location. Also located within web browser window 401 may be a screen area 405 where web pages, web sites or content requested by user may be displayed.

In the present invention, content returned to user computer 204 through step 301 has been appended with an advertising template. Advertising template contains web-based software code that instructs web browser 401 to create two separate frames 406 and 408 on screen area 405, dividing area 405 into two separate portions. Depicted frame 406 is a relatively smaller area compared to frame 408, and may be located as a header (on top) or footer (at bottom) of area 405. Frame 406 will display information items or advertisements 407 served from local advertisement server 221, while frame 408 will display user requested Internet or Intranet content.

Alternatively, advertising template may instruct web browser 401 to create a child browser window 410 to display information items or advertisements 411 and 412. To attract attention of computer 204 user, child window 410 may be displayed simultaneously as user requested content is being displayed on parent web browser area 405.

In another example of an embodiment of the present invention, advertising template received by user computer 204 in step 301 may instruct web-browser to create both a child

window 410 and an advertising frame 406, whereby one or more information items and advertisements served by the local advertisement server 221 may be displayed concurrently in both frame 406 and child window 410. In yet another example, child window 410 may be used to display advertisements served by the local advertisement server 221 that may be of multi-media format. For example, streaming video 411 or scrolling text 412 and sound clips may be also displayed.

Turning now to Fig. 5, one example of the operation of an advertising application module may be seen. In one practice, for each advertising network member, an advertising application module may be installed on each proxy server and on each Intranet web server connected to the member's private data network. Advertising application wraps (or appends) an advertising template, such as that depicted in Fig. 4 around the user requested content packet returned either by Internet servers via the proxy or by Intranet web servers. Advertising template may be "html" code that point to the local advertising server and creates a child browser window and/or a separate portion on the primary browser window where advertisements received from the local advertising server may be displayed. Each advertising application module includes configuration properties containing rules that trigger the application active or inactive under different situations. Each advertising application also includes a communication interface with central advertising server that allows advertising network administrator the ability to set or update such configurations.

More specifically, Fig. 5 depicts a process wherein in step 501 content is presented to the advertising application module 500. The application advertising module (AAM) 500 may, in optional step 510, check the input against the configuration properties, to determine if the input content is to be processed. If the content is not to be processed, the AAM 500 may proceed to step 502 and output the content without changes. Alternatively, if in step 510 it is determined that the content is to be processed, the AAM 500 may check if an advertising template is already present. If so, the AAM 500 may proceed to step 502 and output the content without changes. If no template is present, the AAM 500 may proceed to step 530 to append a template to the content. Once appended, the AAM 500 can return as output the content wrapped in the template.

Figs. 6 and 7 depict representative processes for having the systems and methods described herein to process information provided by the template, and information maintained

about the user, to present to the user, through the template, content, or functionality, that may be of interest to the user. More specifically, the web browser on the user computer may be instructed by the returned content packet that includes an advertising template to display information items or advertisements received from local advertising server at the same time the user requested content may be displayed. In other practices, the template may instruct the user to activate scripts on a server, that will deliver live content, functionality, such as applets, or messaging functions. The advertising template may also initiate a handshake (or connection) between the user computer and local advertising server. After handshake is established, local advertising server (LAS) 600, the operation of which is depicted in Fig. 6, may read the title of the requested content, and the software "cookie" (that provides user identity) stored on the local hard drive of user computer. This is depicted in step 601. The local advertising server 600 may create a new "cookie" for a new user or reinstate "cookie" on a user computer if deleted.

The local advertising server 600 may also provide a user interface to allow new users to create a new user profile, and to allow existing users the ability to update their profile, or profiles. The local advertising server 600 may determine, as shown in step 620, the content category by parsing the title of the requested content and matching keywords found with subject categories stored in the profile database. As shown in step 610, the local advertising server 600 may also determine a user category or categories by searching for the user's profile record with the user "cookie". The LAS 600 may also optionally, retrieve the user's advertisement history and user categories, as shown in steps 630 and 640. The user categories and the identified keywords may be employed in step 660 to retrieve a list of advertisement IDs for the identified categories. Optionally, once the list is retrieved, the LAS 600 may proceed to step 670 to create an advertisement queue based on history and profile, or any other characteristics or combination of characteristics maintained or identified by the LAS 600. In step 680, the LAS 600 may send one or more advertisements (that may or may not have been displayed to user before), whose category or categories matches the user's profile or content subject categories, to the user's computer. The order of presentation may be driven by the queue. Once the ads are presented, the LAS 600 may, in step 690, update the advertising history record for the user.

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Thus, for each user and/or each advertisement, local advertising server 600 may store a database with statistics on advertisements displayed, and advertisements selected. Statistics may be automatically updated each time an advertisement may be displayed to user and each time a



user selects on an advertisement. Local advertising server 600 may be automatically synchronized with central advertising server on a periodic basis scheduled by network administrator. Central advertising server initiates a handshake to connect to each local advertising server. Once connected, central advertising server downloads new advertisements to, and uploads statistics and new user profile from local advertising server.

Turning to Fig. 7, one practice for tracking the selections by a user is presented, and for delivering data associated with an activated ad is presented. Specifically, fig. 7 depicts a process wherein the advertisement selection module (ASM) in step 700 is presented with information representative of the user selected ad, script, or other content. The process 700 can proceed to step 702 and initiate tracking of the user click stream. Additionally, the process 700 will also, in this embodiment, determine whether the content associated with the link activated by the user is to be retrieved from the local server or from a central server, or other remote server. If, the process 700 determines that the link points to the local server, 701, the ASM in steps 711 to 713, identifies, retrieves and sends the requested content. This process may be repeated, if the user drills down through the content. Similarly, if the ASM determines that the user has linked to the central server, the process 700 in steps 721 to 723 identifies, retrieves and sends the requested content. Once the data is delivered, the user may input information to complete the transaction, and the server may receive and process this data through server 223.

It will be understood by those of skill in the art that although several of the Figures graphically depict portions of the system, in part or in whole, as functional block elements of a system, that these elements may be realized as computer programs or portions of computer programs that are capable of running on a data processor platform to thereby configure the data processor as a system according to the invention. Moreover, it will be understood that the depicted systems may be hardware systems, software systems and combinations of hardware and software systems. The software components of the system may be implemented as a C language computer program, or a computer program written in any high level language including C++, Fortran, Java or Basic. The development of such components follows from the description herein and from principles known to those of skill in the art, including general techniques for high level programming, including for example those set forth in, Stephen G. Kochan, *Programming in C*, Hayden Publishing (1983).

Moreover, it will be understood that the illustrated embodiments and practices are merely representative of the systems and methods of the invention, which may be employed for allowing network services providers to offer different pricing options to different customers. For example, those customers willing to allow advertising within the company, may pay less for network services, or may receive free service, or upgrades of hardware or software. Additionally, the systems and methods described herein may allow for ASP providers to allow advertising revenue to support the providing of ASP services to a company. Thus a company may be provided with free access to a time and billing program, through an ASP that provides this service in return for allowing the ASP to present adds to members of the company. Accordingly, the invention in the case, are not to be limited by the above description of certain illustrated embodiments, but are to be understood the claims as set forth below, which are to be interpreted as broadly as allowed under the law.

We Claim:

1. A method of distributing and broadcasting information through content insertion at the point of Internet access, comprising

5

initiating a request for data from a web destination;  
routing said request to a Proxy;  
the Proxy returning a communication template to the requester of the data;  
executing the communication template, wherein executing the template further

10 comprises:

creating two documents within the window, wherein the first document  
initiates a request for data from a communication server; and  
a second document initiates a request for data from the web destination.

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2. A method according to claim 1, including  
providing an advertising server for selecting advertising content to be delivered to a user,  
optionally as a function of a user profile associated with the user.

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3. A method according to claim 1, further including  
identifying for a user a geographical region associated with the user and delivering  
advertising content to the user as a function of the identified geographical region.

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5. A method of inserting content into an Internet data stream at the point of access onto the web, comprising

initiating a request for data from a web destination;  
intercepting the request before the request reached the web destination; and  
supplementing the original request with one or more additional requests for data  
from other web destination(s);

30

7. A method of distributing and broadcasting information through content insertion at the point of Internet access comprising:

initiating a request for data from a web destination;

receiving a DNS resolution request from one of a plurality of clients;

routing the request to a Proxy;

the Proxy returning a communication template to a requester of the data;

executing communication template, wherein executing said template further comprises:

creating two documents within the window, wherein a first document initiates a request for data from communication server; and a second document initiates a request for data from the web destination.

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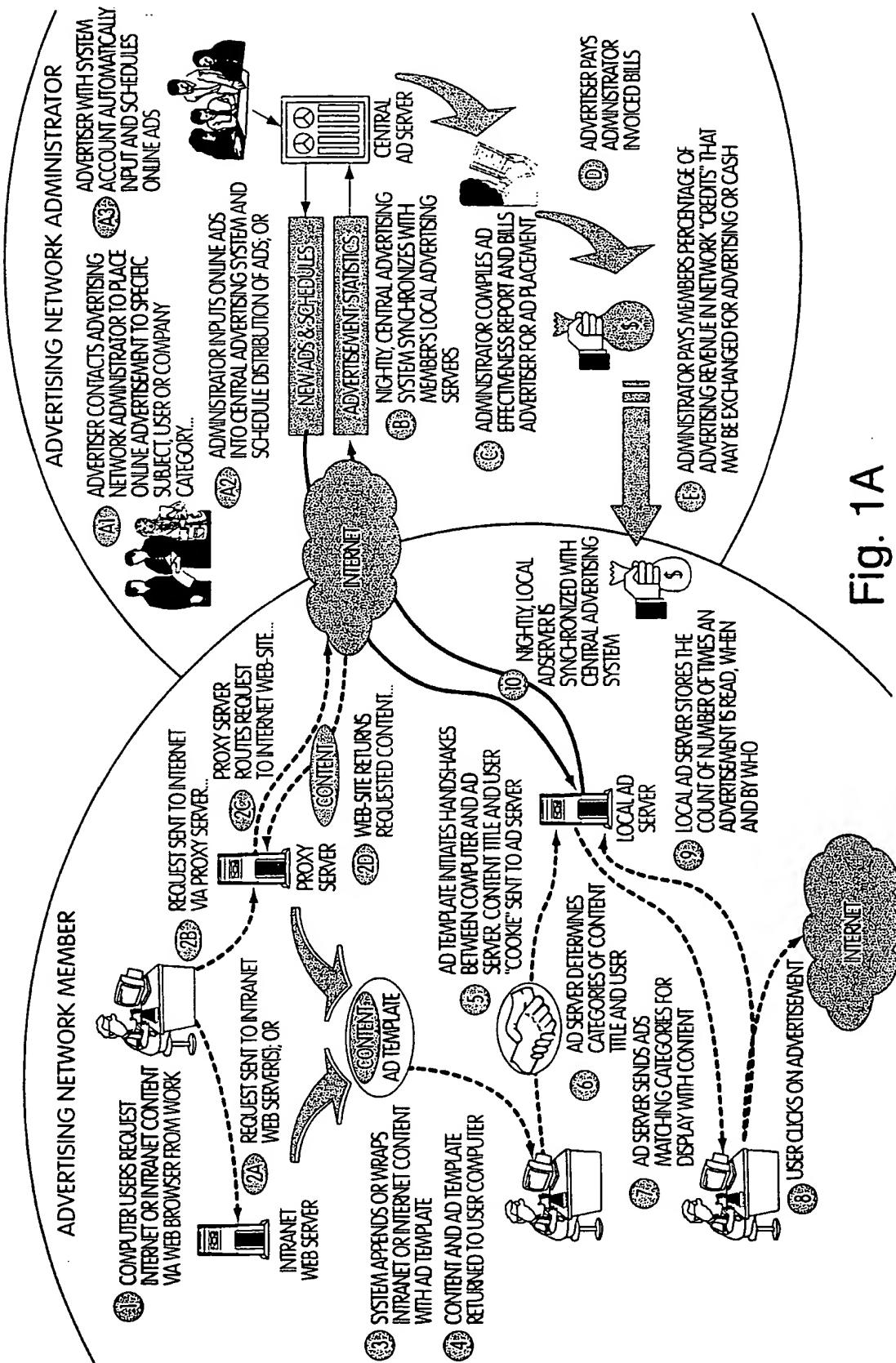


Fig. 1A

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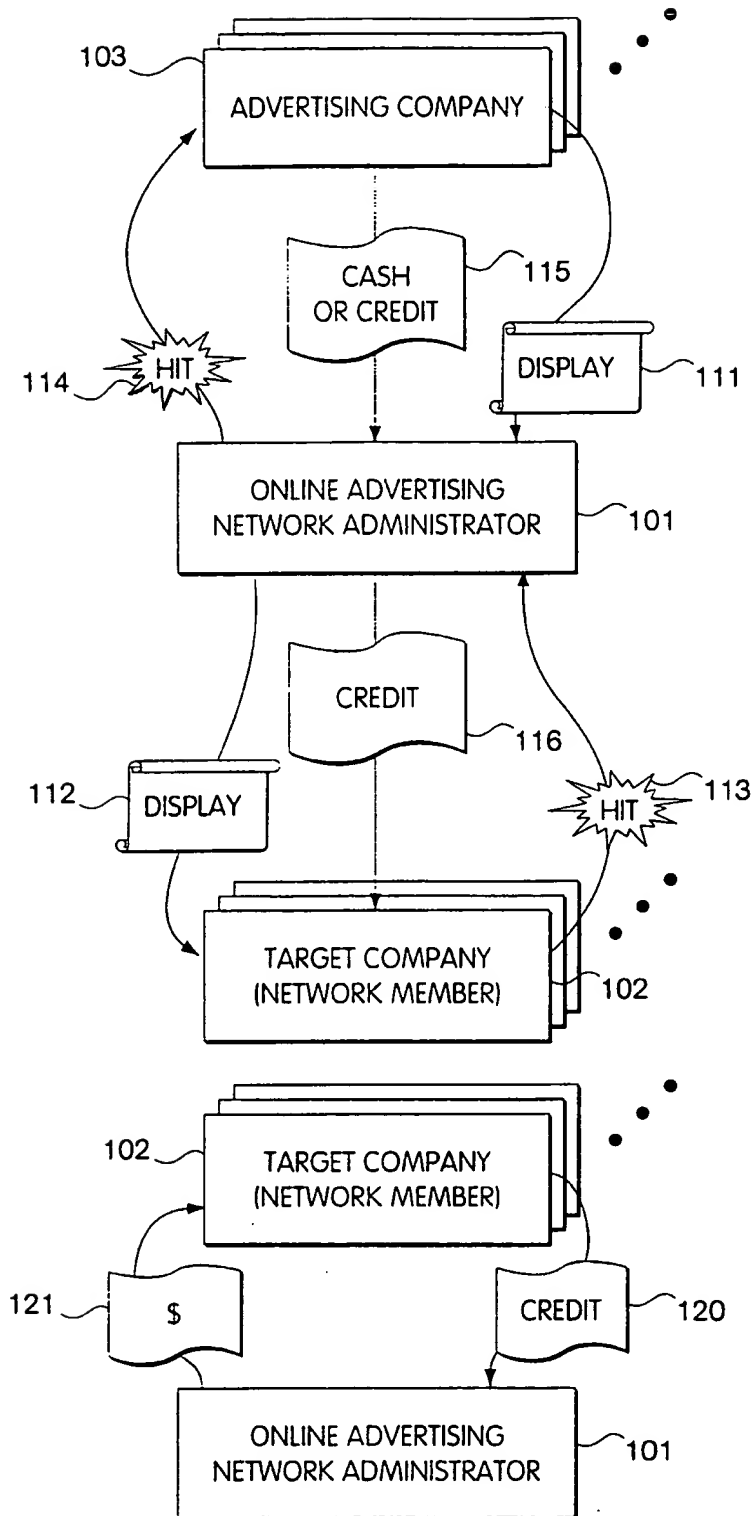


Fig. 1B

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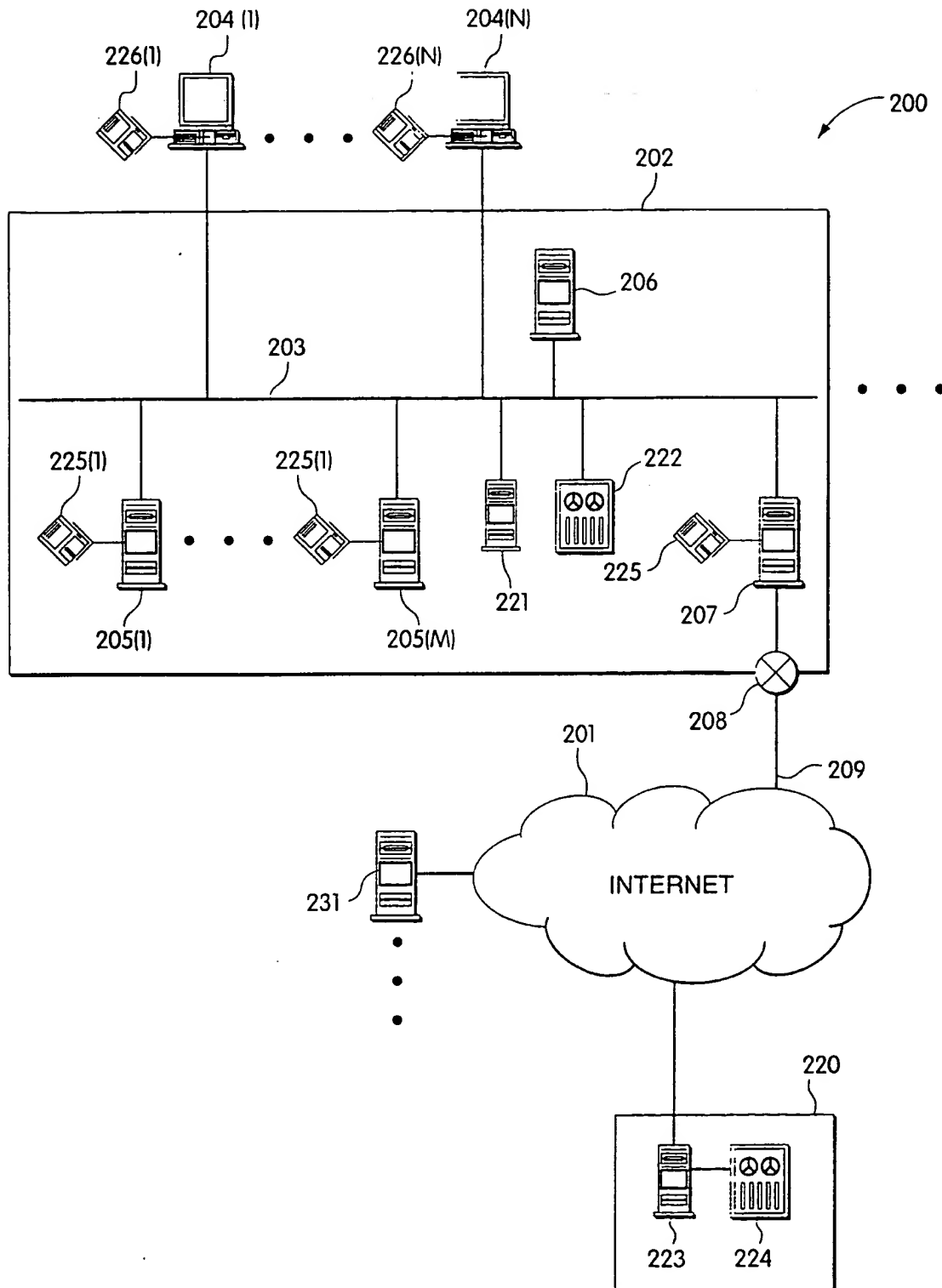


Fig. 2

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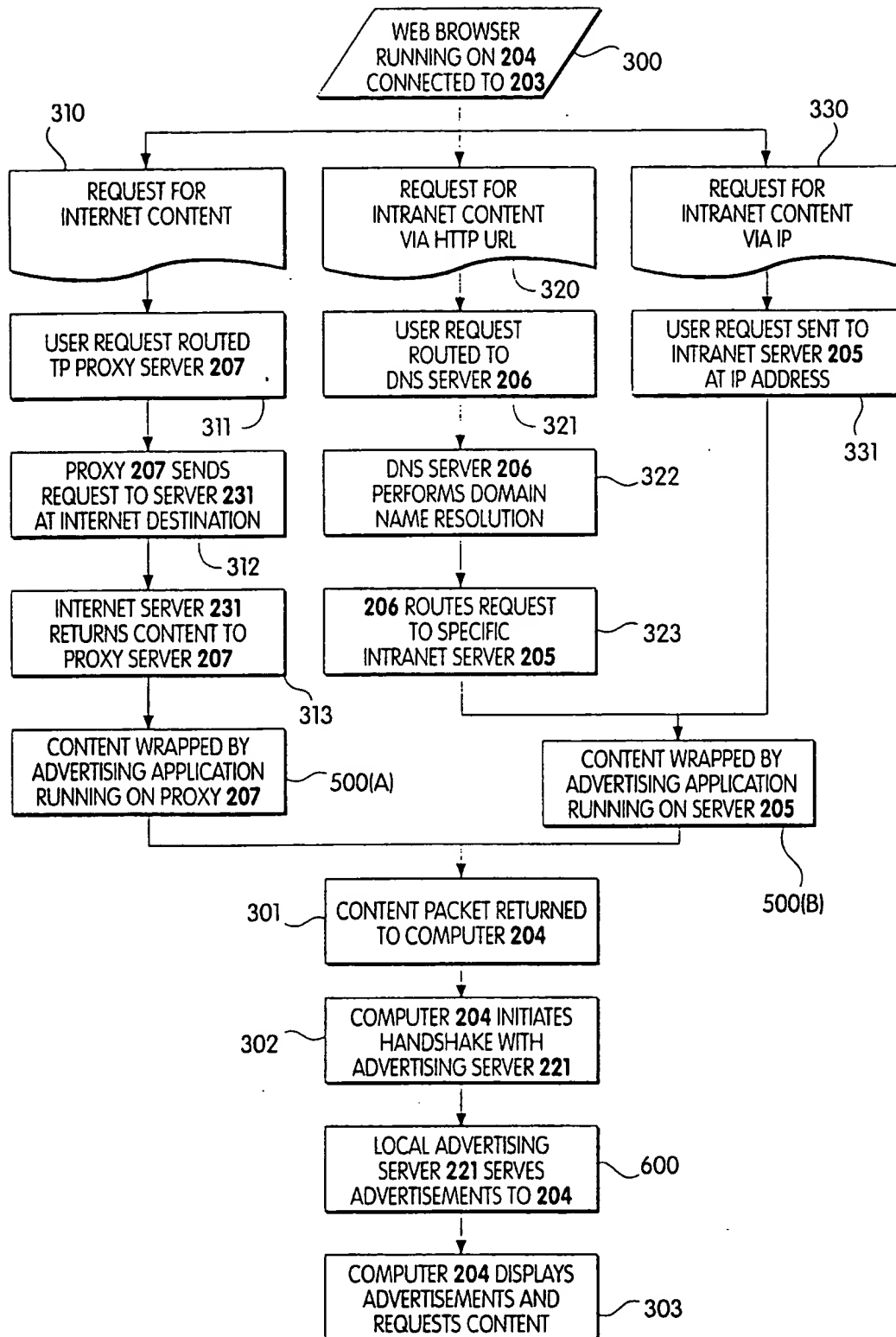


Fig. 3



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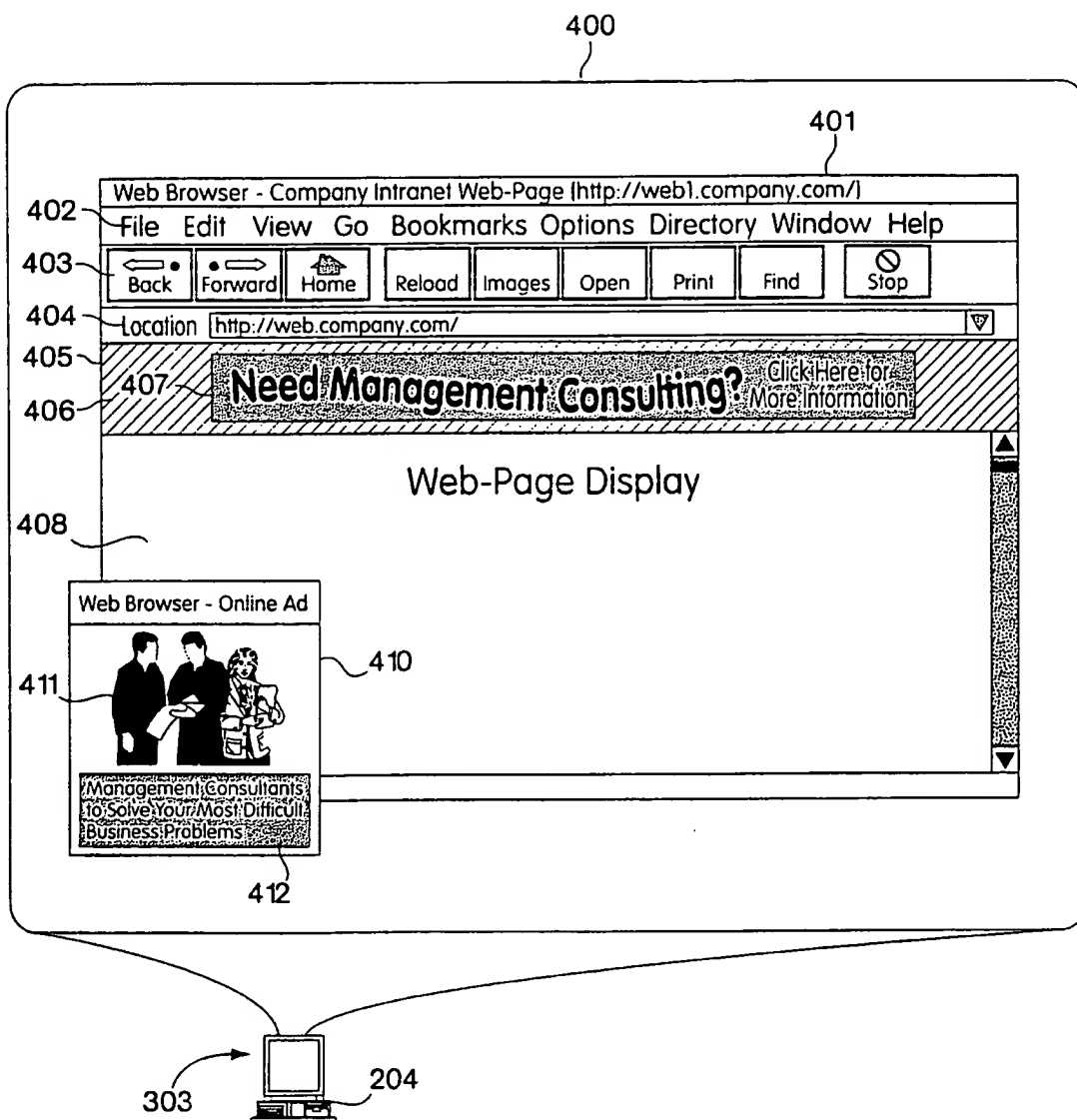


Fig. 4

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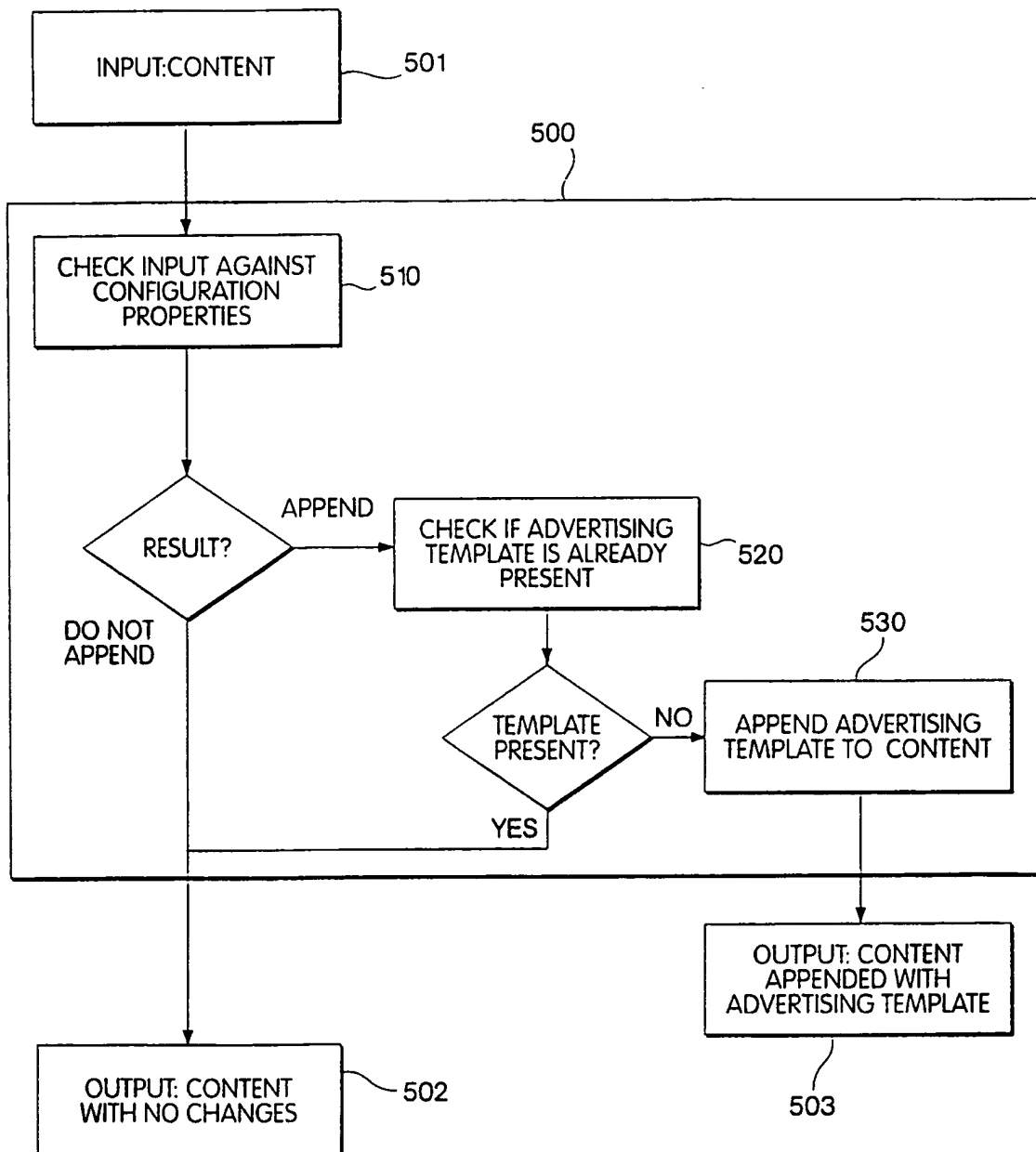


Fig. 5

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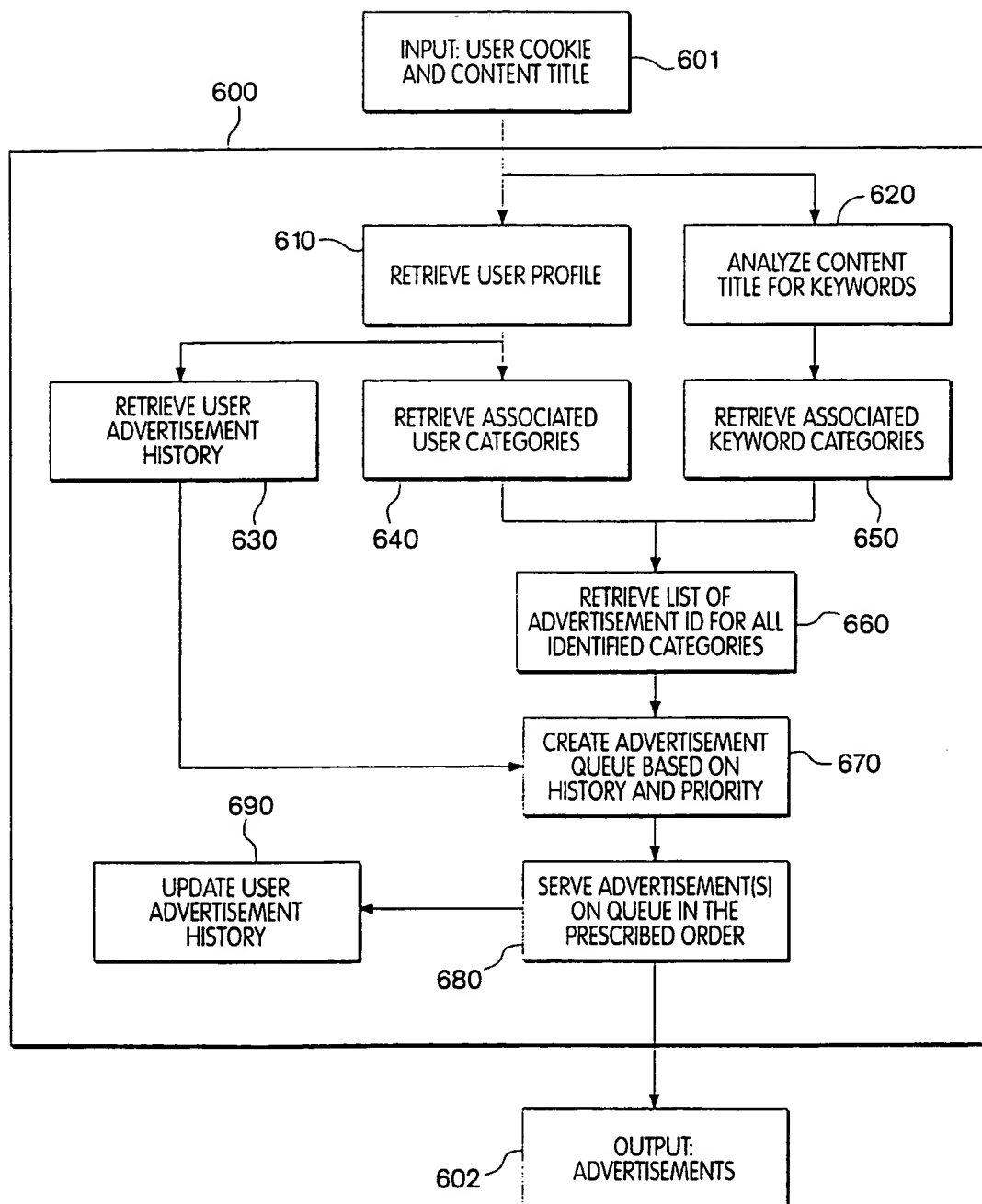


Fig. 6

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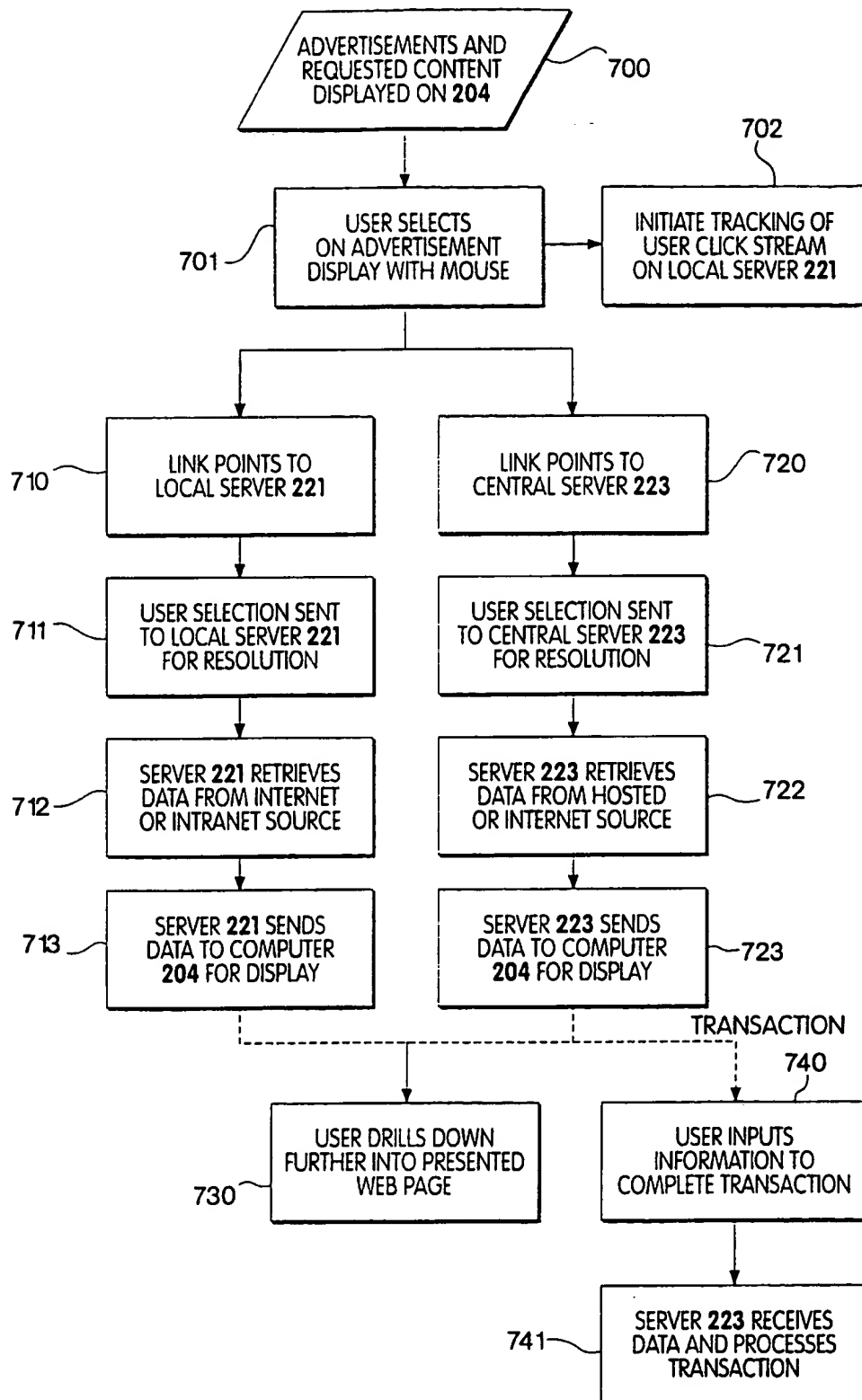


Fig. 7